

ABSTRACT OF THE DISCLOSURE

An automation system, and method for operating an automation system, comprising at least one automation device and one programming device connected therewith, or each containing a communications program, so that they can communicate with one another. The automation device executes an application program, particularly a program to control and/or monitor an external technical process, and the programming device monitors the execution of the application program in that one or a plurality of data addresses (1132, 1133) of the application program is selected for monitoring on the programming device. For each data address (1132, 1133) selected for monitoring, a code address (1131), that is, an address of the application program, particularly an address in the immediate proximity of a segment of the application program that influences the content of the selected data address, is selected on the programming device, and the selected data address (1132, 1133) together with the code address (1131) is transmitted to the automation device as part of a request message (AT). The present invention records the content of the selected data address (1132, 1133) during execution of the application program when the corresponding code address (1131) is reached, and the recorded content of the data address is transmitted to the programming device as part of a result message (ET).